PROC. ENTOMOL. SOC. WASH.
84(3), 1982, pp. 475–479

A REVIEW OF THE GENUS *CHAETOCOELUS* LeCONTE (COLEOPTERA: MALACHIIDAE)

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Abstract.—*Chaetocoelus* LeConte and *C. setosus* LeConte are redescribed. *Chaetocoelus* is characterized by the presence in the male of a pectinate comb of stout, black teeth on the anterior margin of segment I of the protarsus. This character, not mentioned in the original description, places the genus in the subfamily Carphurinae. *Chaetocoelus* is closely related to *Carphuroides* Champion from which it differs primarily by the greatly reduced female elytra, a character of dubious generic value. Formal synonymy is not currently recommended; however, *C. setosus* should be considered in any revision of the genus *Carphuroides*. A lectotype is designated for *C. setosus*.

The monotypic genus *Chaetocoelus* was described by LeConte in 1880. The genus was briefly characterized by the brachyelytrous female, and the presence in both sexes of long, stiff bristles at the sides of the abdomen. Marshall (1954), relying on LeConte's description, placed *Chaetocoelus* in the subfamily Malachiinae. Recently I was able to examine the type-series of *Chaetocoelus setosus* and discovered several characters not mentioned by LeConte in his original description. The most important of these, the presence of a pectinate comb of stout, black teeth on the anterior margin of segment I of the male protarsus, suggests that *Chaetocoelus* belongs in the subfamily Carphurinae. Redescriptions of *Chaetocoelus* and *C. setosus* and a discussion of the taxonomic placement of the genus are given below.

Genus *Chaetocoelus* LeConte

Chaetocoelus LeConte, 1880: 194 [Type-species: *Chaetocoelus setosus* LeConte; fixed by monotypy]; LeConte and Horn, 1883: 214; Marshall, 1948: 125, 1954: 75; Wittmer, 1961: 612.

Description.—Small, graciliform. Surface shining. Yellow brown to reddish brown. Pubescence conspicuous; long erect setae on head, pronotum, elytra, and abdomen.

Head short, frons slightly impressed. Clypeus short, appearing entirely

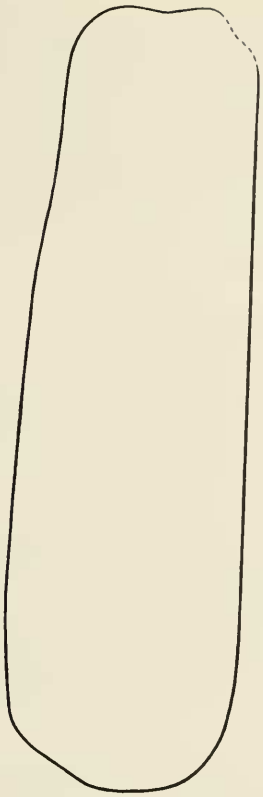
membranous; epistomal suture tangential to antennal sockets. Antenna 11-segmented, submoniliform to subserrate.

Pronotum quadrate, as wide as head, apex not produced; anterior angles variable; sides slightly and evenly produced; posterior angles broadly rounded, not reflexed; disc smooth, lacking sulci or other impressions. Elytra varying in length, fully developed in male, greatly reduced in female; apex unmodified in both sexes. Wings present, fully developed in male, reduced to small pads in female. Tarsi 5-segmented in both sexes; segment I of male protarsus with a pectinate comb of stout, black teeth on anterior margin; segments II–IV of both sexes narrow, rounded at apex, not bilobed.

Abdominal sterna completely sclerotized medially; terminal abdominal sternum broadly rounded in both sexes; pygidium truncate in male, broadly rounded in female. Aedeagus of male genitalia with median lobe elongate, bluntly bilobed apically (dorsal aspect); internal sac armed with large acute spines.

Remarks.—The family Malachiidae has been divided into two subfamilies, the Carphurinae and Malachiinae (Champion, 1923; Evers, 1968). The Carphurinae are characterized by the presence of a pectinate comb of stout, black teeth on the anterior margin of segment I of the male protarsus, the presence of eight small pairs of eversible vesicles (one between head and prothorax, one on metepimeron, and one each on the lateral margins of abdominal sterna I–VI), the presence of seven visible abdominal sterna, and the bilobed apex of the median lobe of the aedeagus. The Malachiinae are characterized by the absence of a comb on segment I of the male protarsus, the presence of two large pairs of eversible vesicles (one between head and prothorax and one between metasternum and first abdominal sternum), the presence of six visible abdominal sterna, and the simple apex of the median lobe of the aedeagus. The presence of a tarsal comb on segment I of the male protarsus, a character overlooked by LeConte in his description of *Chaetocoelus*, as well as concurrence of other characters mentioned above, places the genus in the subfamily Carphurinae.

Chaetocoelus, with the exception of a specimen from Ceralbo Island in the Gulf of California identified by Marshall (1951) as *Carphuroides atratulus* (Gorham), is the only genus of Carphurinae known from North America. It appears to be most closely related to the genus *Carphuroides* Champion (1923). In both taxa tarsal segments II–IV are narrow and rounded at the apex rather than broad and more or less bilobed as they are in most other carphurine genera, and the pronotum is unmodified, without sulci or other impressions. Males of *Chaetocoelus* cannot be distinguished from males of *Carphuroides* by any character or combination of characters. Females differ only in that those of *Chaetocoelus* are brachyelytrous and brachypterous while females of *Carphuroides* tend to have the elytra and wings



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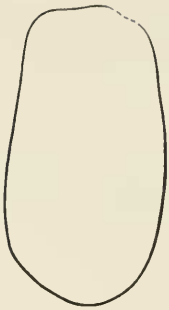

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Figs. 1–3. *Chaetocoelus setosus*. 1, Male elytron, dorsal aspect. 2, Female elytron, dorsal aspect. 3, Male protarsus, anterior aspect.

fully developed. These characters have not often been used as a basis for characterizing genera of Malachiidae, and in some (*Endeodes* and *Attalusinus*) there is considerable interspecific variation with respect to the length of the elytra and the development of the wings. This suggests that the two taxa may be congeneric. However, *Carphuroides* is a large, widely distributed genus, and, until its numerous species can be studied along with *Chaetocoelus setosus* in the context of a generic revision, formal synonymy is not recommended.

Chaetocoelus setosus LeConte

Figs. 1–3

Chaetocoelus setosus LeConte, 1880: 194 [Lectotype, ♂, herein designated from Columbus, Texas, in the Museum of Comparative Zoology, Harvard University, Cambridge, Mass. (Type No. 3465, examined)]; LeConte and Horn, 1883: 214; Marshall, 1948: 125.

Description.—Length 1.8 mm, male; 0.8–1.1 mm, female (measured from anterior margin of pronotum to apex of elytra). Pale yellow brown to dark reddish brown; elytra yellow brown, apex darker in female. Pubescence conspicuous; long, erect, tan to reddish-brown setae on head, pronotum, elytra, and abdomen; lateral margins of abdomen with some setae 1.5× as long as eye or shorter in male, and 4 to 5× as long as eye or longer in female.

Head 1.6, male; 1.3–1.4, female, as wide as interocular distance; frons, interocular margins, and much of vertex with finely sculptured ridges; ridges transverse on vertex, and more or less longitudinal on interocular margins and frons; median apex of vertex smooth, finely, sparsely punctate. Antenna short, stout, barely surpassing elytral humeri in male, shorter in female; segments III–X subserrate in male, submoniliform in female; VII 0.8–1.0 as long as wide. Eyes coarsely faceted in both sexes; male eyes nearly twice as large as female eyes.

Pronotum 0.78, male; 0.80–0.85, female, as long as wide; anterior angles truncate in male, broadly rounded in female; lateral margins diverging from base in male, widest at apical angles; lateral margins subparallel in female, widest near middle. Elytra of male (Fig. 1) long, sutural margin entire, 4 abdominal terga exposed; female elytra (Fig. 2) short, sutural margin divergent apically, 7 abdominal terga exposed.

Tarsal comb (Fig. 3) on segment I of male protarsus with 7 teeth.

Abdomen wider than elytra in female; segments II and III widest, IV to VII tapering to apex. Aedeagus of male genitalia with a pair of long sharp spines at apex of internal sac.

Geographic distribution.—Southeastern North America from Florida west to Texas.

Specimens examined.—FLORIDA: 4 ♀ Punta Gorda, II.7/10.40. TEXAS: 1 ♂, 2 ♀ Columbus, 1–17 June.

Acknowledgments

I thank Armin Coray, biological illustrator, Basel, Switzerland, for the drawings, and John D. Pinto, University of California, Riverside, for suggestions concerning the manuscript.

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